



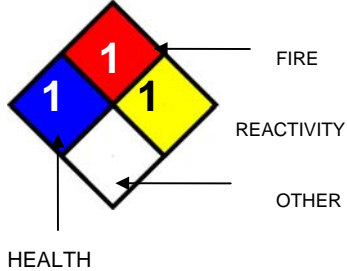
PUT OUR ENERGY TO WORK FOR YOU.

Two International Drive, Suite 200, Portsmouth, NH 03801  
Tel (603) 431-1000 FAX (603) 430-7290  
An Axel Johnson, Inc. Company

**MATERIAL SAFETY DATA SHEET**

**#4 FUEL OIL**

Revised 11/98; 10/12/00; 07/19/02; 06/05.  
Reformatted 4/99.  
Page 1 of 4.

SECTION 1 - MATERIAL IDENTIFICATION		24 HOUR EMERGENCY INFORMATION	
<b>PRODUCT / CHEMICAL NAME</b>	<b>#4 FUEL OIL</b>	Sprague: 603-431-1000 Chemtrec: 800-424-9300	
<b>PRODUCT / CHEMICAL SYNONYMS</b>	RESIDUAL FUEL OIL #4.	<b>HMS / NFPA HAZARD RATING</b>  4=EXTREME 3=SERIOUS 2=MODERATE 1=SLIGHT 0=MINIMAL	
<b>CHEMICAL FAMILY / FORMULA</b>	PETROLEUM DISTILLATES		
<b>MATERIAL USE OR OCCURRENCE</b>	INDUSTRIAL FUEL OIL		

SECTION 2 - INGREDIENTS						
COMPONENT	%	C.A.S. NO.	OSHA PEL	OSHA STEL	ACGIH TLV	OTHER
NO. 4 FUEL OIL Consisting of a complex mixture of parafinic, olefinic, and naphthenic hydrocarbons, plus fused polycyclic hydrocarbons (C10 and higher) as benzene solubles.	>99	68-476-335	5 mg/M <sup>3</sup> (mineral oil mist)		5 mg/M <sup>3</sup>	
Polycyclic Hydrocarbons	<1	08-007-452	0.2 mg/M <sup>3</sup>		0.2 mg/M <sup>3</sup>	(benzene solubles as coal tar pitch volatiles).

SECTION 3 - PHYSICAL DATA			
<b>BOILING POINT:</b>	220°-300°F (104°-149°C)	<b>% VOLATILITY BY VOLUME:</b>	N/A
<b>VAPOR PRESSURE (mm Hg):</b>	0.1	<b>VAPOR DENSITY (AIR = 1):</b>	6
<b>SPECIFIC GRAVITY (H2O = 1):</b>	.90 - 1.00	<b>SOLUBILITY IN WATER:</b>	Insoluble.
<b>EVAPORATION RATE (n-butyl acetate = 1):</b> 0.01			
<b>APPEARANCE &amp; ODOR:</b> Dark, oil liquid, characteristic hydrocarbon odor, floats on water.			

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA	
<b>FLASH POINT:</b> 142°-240° F (61°-116° C)	<b>AUTOIGNITION TEMP:</b> 505° F (263° C)
<b>FLAMMABILITY LIMITS IN AIR (% BY VOL.)</b>	<b>LEL:</b> 1.0 <b>UEL:</b> 5.0
<b>EXTINGUISHING MEDIUM:</b> Dry chemical, foam, carbon dioxide.	
<b>SPECIAL FIRE FIGHTING PROCEDURES:</b> Use supplied-air breathing equipment for enclosed areas. Cool exposed containers with water spray. Continue water spray until entire container contents are cool. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of storage tank due to fire (subject to the fire chief's directions).	
<b>UNUSUAL FIRE AND EXPLOSION HAZARDS:</b> Do not mix or store with strong oxidants. Do not store or pour near sources of ignition. Do not pressurize, cut, heat, weld, or expose to sources of ignition. Vapors are heavier than air and may travel a considerable distance to a source of ignition and flash back.	

### SECTION 5 - HEALTH DATA

<b>TOXICOLOGICAL TEST DATA:</b>	No data available.	<b>RESULTS:</b>
	<b>ACUTE HEALTH EFFECTS</b>	<b>CHRONIC HEALTH EFFECTS</b>
<b>INHALATION</b>	Mist or vapor may cause respiratory tract irritation. CNS depressant. High levels may cause giddiness, headache, dizziness, nausea, vomiting, lack of coordination, narcosis, stupor, coma, and unconsciousness.	Prolonged exposure may cause dizziness, weakness, weight loss, anemia, nervousness, pains in the limbs, peripheral numbness, and paresthesia. Renal failure possible. Degenerative changes of liver and kidneys may occur after prolonged exposure to high concentrations.
<b>INGESTION</b>	Irritation, giddiness, vertigo, headache, anesthetic stupor, CNS depression, coma and death.	No data available
<b>SKIN CONTACT</b>	Drying, cracking and defatting dermatitis. Direct contact may cause extreme irritation with severe erythema and edema with blistering and open sores. Absorption of large amounts may result in narcosis.	Repeated or prolonged exposure may cause irritation, dermatitis, and a rash of pimples and spots.
<b>EYE CONTACT</b>	Irritation is possible. However, animal studies indicate that irritation is unlikely.	No data available.

### FIRST AID



### PROCEDURES

**INHALATION:** Remove from vapor to fresh air. If breathing has stopped give artificial respiration. Maintain airway and blood pressure and administer oxygen if available. Keep affected person warm and at rest. Administration of oxygen should be performed by qualified personnel. Get medical attention immediately.

**INGESTION:** **DO NOT INDUCE VOMITING or give anything by mouth to an unconscious person.** When vomiting occurs, keep persons head lower than head to prevent pulmonary aspiration. Get medical attention immediately.

**SKIN CONTACT:** Remove contaminated clothing. Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains (approximately 15-20 minutes). If irritation develops, seek medical aid.

**EYE CONTACT:** Flush eyes immediately with large amounts of water, occasionally lifting upper and lower lids until no evidence of chemical remains (approximately 15-20 minutes). If irritation develops, seek medical aid.

**MATERIAL SAFETY DATA SHEET****#4 FUEL OIL**Revised 11/98; 10/12/00; 07/19/02; 06/05.  
Reformatted 4/99. Page 3 of 4.**SECTION 6 - REACTIVITY DATA**

<b>STABILITY:</b>	Stable under normal temperatures and pressures.
<b>HAZARDOUS POLYMERIZATION:</b>	Hazardous polymerization has not been known to occur under normal temperatures and pressures.
<b>CONDITIONS TO AVOID:</b>	May be ignited by heat, sparks, or flame. Vapors may travel to a source of ignition and flash back. Vapor explosion hazard indoors, outdoors, or in sewers.
<b>INCOMPATIBLES:</b>	May explode or react violently when exposed to oxidizing materials.
<b>TYPICAL DECOMPOSITION PRODUCTS:</b>	Thermal decomposition may release various hydrocarbons and hydrocarbon derivatives including carbon dioxide, carbon monoxide, water, organic acids, and aldehydes.

**SECTION 7 - SPECIAL PROTECTION**

<b>RESPIRATORY PROTECTION:</b>	Use with adequate ventilation. For large spills or when completing work in confined spaces, use a mask with an organic vapor cartridge or positive pressure air supplied (SCBA) unit.	
<b>VENTILATION</b>	<b>LOCAL EXHAUST:</b>	Indoors: Lab hood recommended Outdoors: Work upwind.
	<b>MECHANICAL</b>	Recommended for use in enclosed or semi-enclosed work areas.
	<b>(General):</b>	
<b>EYE PROTECTION:</b>	Splash goggles or shields with safety glasses	
<b>PROTECTIVE GLOVES:</b>	Neoprene, PVC.	
<b>OTHER PROTECTIVE CLOTHING OR EQUIPMENT:</b>	Employee must wear appropriate impervious clothing and equipment to prevent repeated or prolonged skin contact with this substance.	

**SECTION 8 - SPECIAL PRECAUTIONS**

<b>PRECAUTIONS FOR SAFE HANDLING AND STORAGE:</b>	Avoid excessive inhalation or skin contact. Isolate from sources of ignition.
<b>SPILL AND LEAK PROCEDURES:</b>	Shut off ignition sources (no smoking, shut off flames or flares in hazard area). Isolate hazard area and restrict entry. If properly trained, proceed with the following measures: 1. For small spills, take up with sand or other absorbent material and place into containers for later disposal; and, 2. For large spills, dike far ahead of spill to prevent entrance into watercourses and/or ground water. Observe local, state, and federal governmental regulations.
<b>WASTE DISPOSAL METHOD</b>	Recycle or dispose of in accordance with local, state, and federal safety and environmental laws and regulations.

**SECTION 9 - DOT HAZARDOUS MATERIAL INFORMATION**

<b>PROPER SHIPPING NAME:</b> FUEL OIL (#4)	<b>LABEL:</b> FLAMMABLE	<b>REQUIRED PLACARDING:</b> FLAMMABLE OR COMBUSTIBLE / 1993
<b>HAZARD CLASS:</b> CLASS 3 (Flammable liquid)	<b>PACKING GROUP</b> <b>(P.G.):</b> III	<b>N.A./U.N. NUMBER:</b> NA 1993
<b>HAZARDOUS SUBSTANCE / RQ:</b> NOT AVAILABLE	<b>SHIPPING DESCRIPTION:</b> FUEL OIL (#4), 3, NA 1993, PG III	
<b>NOTE:</b> This product may be re-classed as a combustible liquid when shipped domestically, by land only. If re-classed as a combustible liquid, this product is unregulated by DOT when shipped in non-bulk quantities.		



**MATERIAL SAFETY DATA SHEET**

**#4 FUEL OIL**

Revised 11/98; 10/12/00; 07/19/02; 06/05.  
Reformatted 4/99. Page 4 of 4.

**SECTION 10 - EPA SARA TITLE III INFORMATION**

<b>SECTION 311/312</b>	<b>ACUTE: YES</b>	<b>CHRONIC: YES</b>	
<b>HAZARD CLASSIFICATION:</b>	<b>FIRE: YES</b>	<b>PRESSURE: NO</b>	<b>REACTIVE: NO</b>

**SECTION 11 - REMARKS**

None

**SECTION 12 - ADDITIONAL REGULATORY DATA**

<b>REPORTABLE COMPONENTS:</b>	<b>FEDERAL EPA</b>	<b>%</b>	<b>SARA RQ</b>	<b>CERCLA RQ</b>	<b>RCRA NO.</b>
	<b>#4 FUEL OIL</b>	<b>100</b>	<b>-----</b>	<b>-----</b>	

The information contained herein is based on data available at this time and is believed to be accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Since information contained herein may be applied under conditions beyond our control and with which we may be unfamiliar, no responsibility is assumed for the results of its use. The person receiving this information shall make his own determination of the suitability of the material for his particular purposes.